

Halogenated HC's

Aliphatic

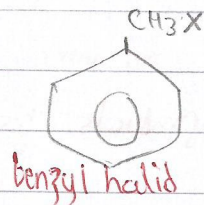
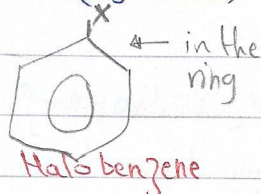
(alkyl halides) $R-X$

Aromatic

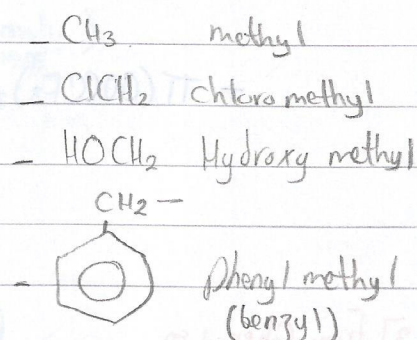
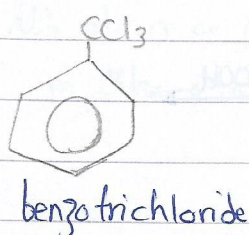
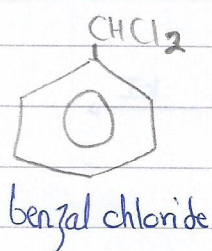
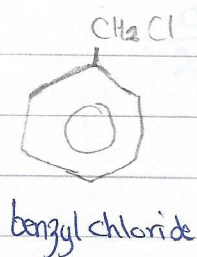
nuclear substituted

Side-chain substituted

(aryl halides)

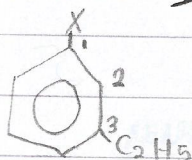


Nomenclature ex

Side chain substituted ex

"Aryl halides"
 "nuclear substituted"

Nomenclature ex

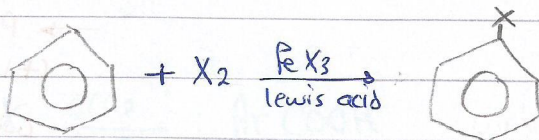


(Discussed before)

1-halo-3-ethyl benzene
 m-ethyl halo benzene

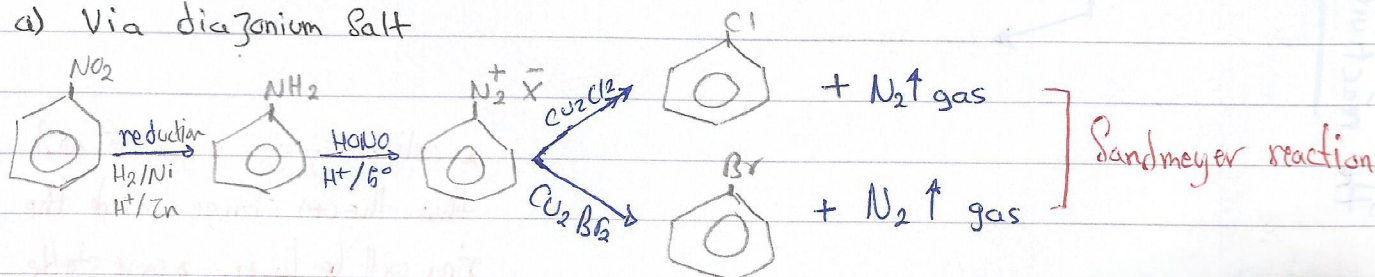
Synthesis ex

1) Direct halogenation

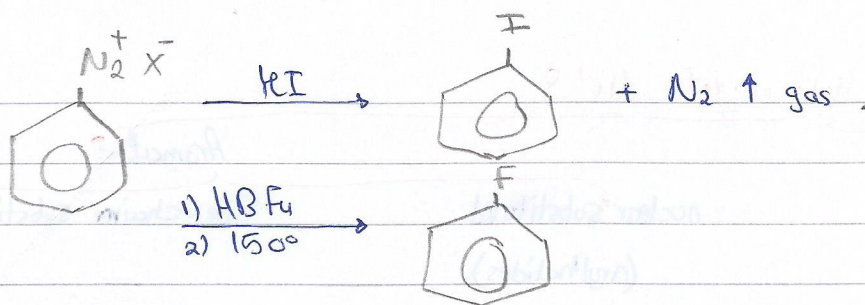


2) Indirect halogenation

a) Via diazonium salt

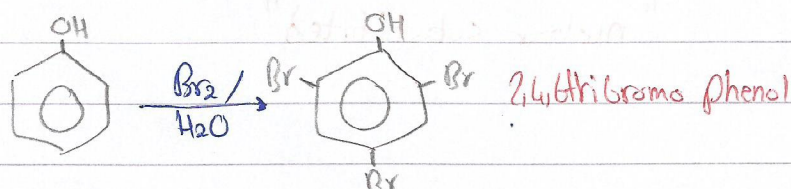
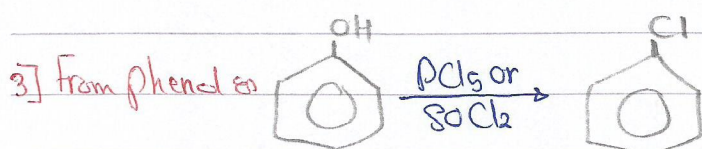
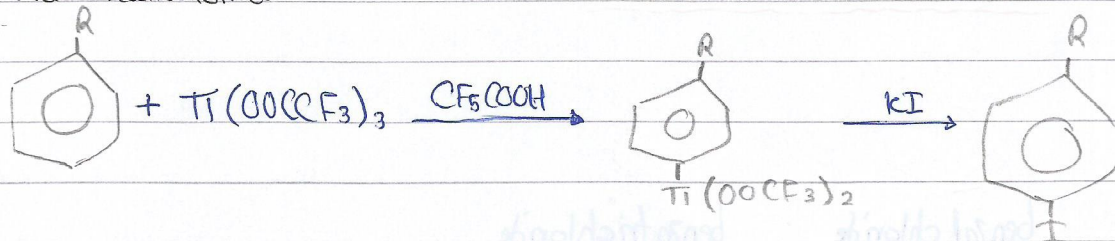


(31)



* the products resulted from indirect halogenation is more pure than that of direct halogenation

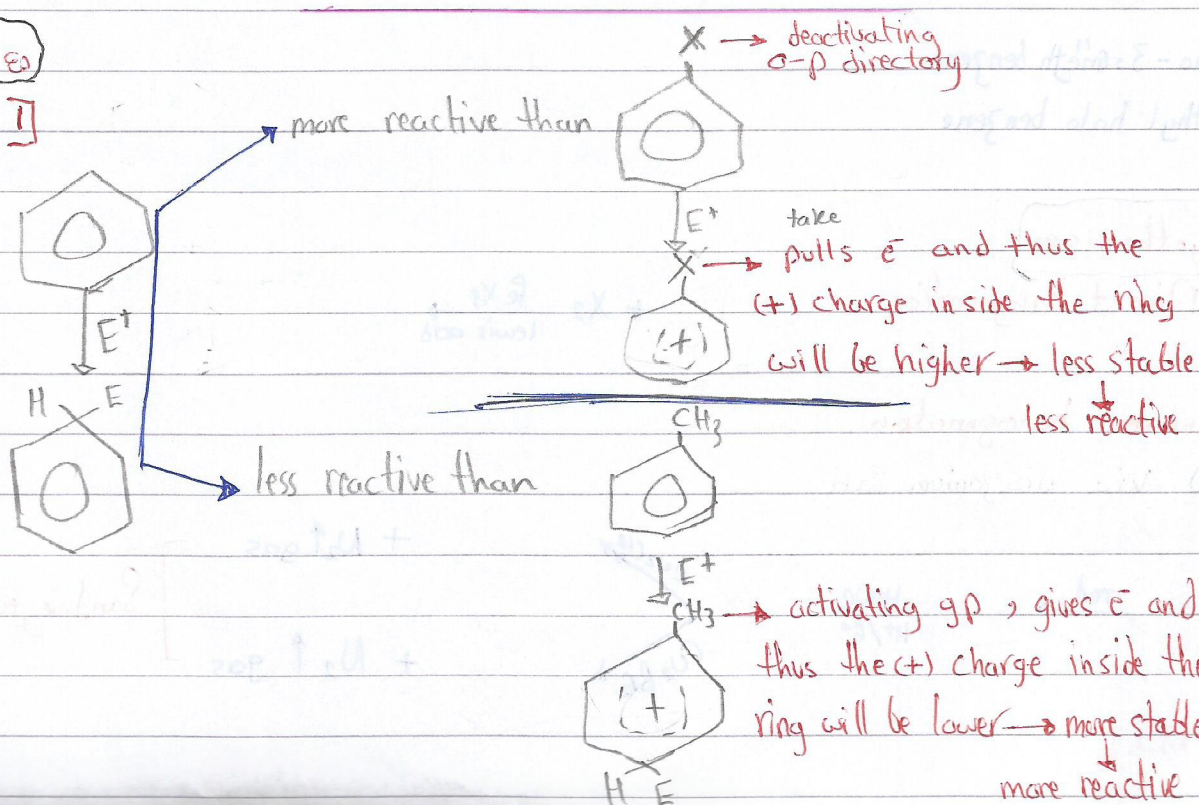
b) via thallation



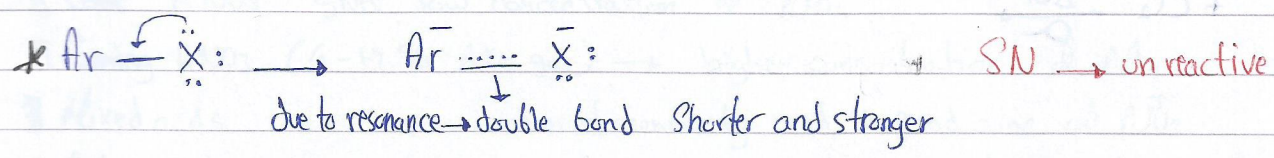
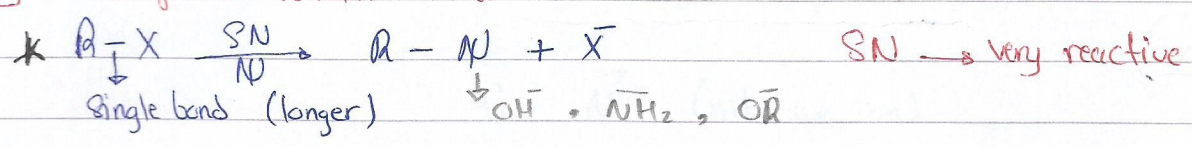
Reactions

1]

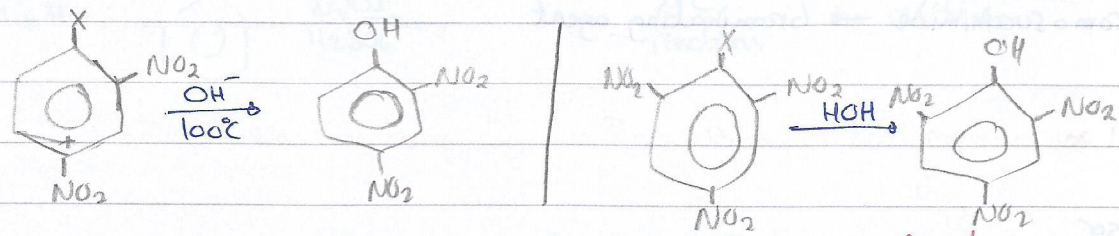
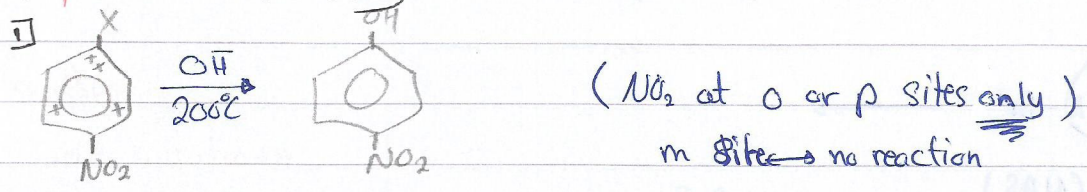
Stability of anion ion intermediate
The reactivity of the compound



2] Nucleophilic substitution



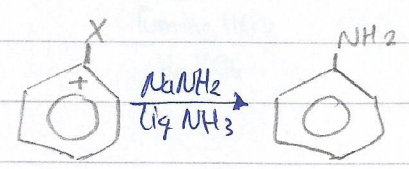
Requirements of SN



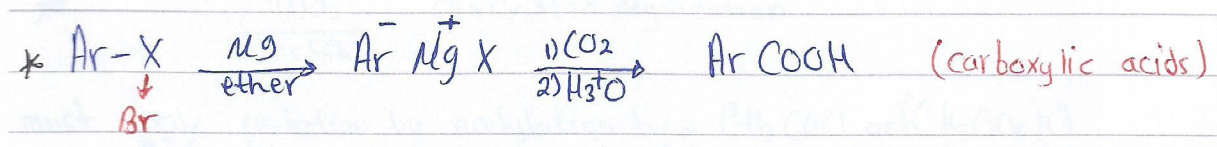
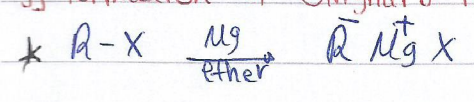
resonance $\rightarrow$ charge + $\rightarrow$  NO_2 δ^+ *

2] Very strong N (NH_2^-) $\leftarrow NaNH_2 / Liq NH_3$

Sodium amide

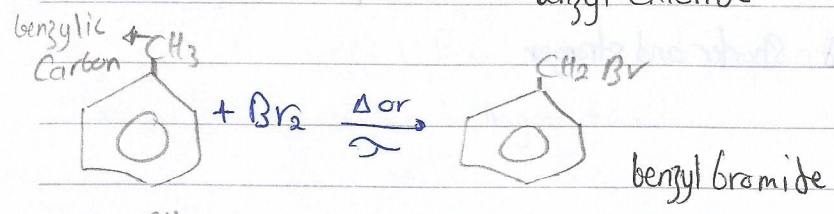
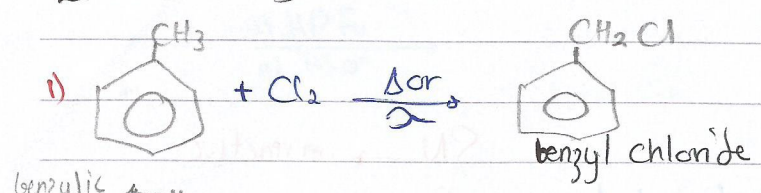


3] Formation of Grignard reagent

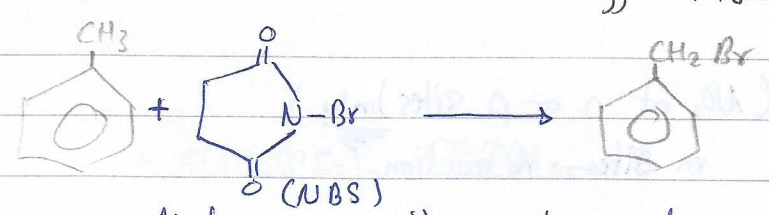


"Side chain Substituted"

Synthesis

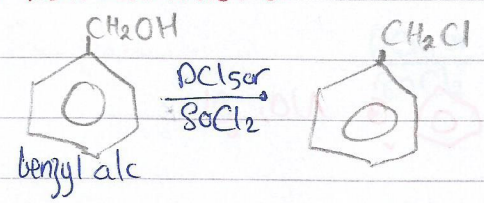


(Br₂ is toxic and not safe)



N-bromo succinimide $\rightarrow$ brominating agent (Solid and more safe)

2) From alcohol



Reactions

Similar to RX

